

122-132
TITANIUM RESEARCH & DEVELOPMENT
CYANAMID
INTEROFFICE CORRESPONDENCE

AUG 18 1972

Savannah, Georgia

8/17/72

OFFICE (BLDG/105) RM#
AMERICAN CYANAMID CO.
SAVANNAH, GA.

TO: Wayne
ATTN. OF: V.P. Langone

SUBJECT: Copperas Status Report

REFERENCE: Phone request 8/9/72

COPY TO:

R.E. Logan NA
Dr. G. Roberts SA
J.E. Desprez SA
D.E. Wilder SA
T.L. Kohler BB
C.L. Pulsfort NA

TITANIUM RESEARCH
& DEVELOPMENT

RECEIVED
AUG 18 1972
AMERICAN CYANAMID CO.
SAVANNAH, GA.

The following is an account of action taken to determine the cause (s) of hardening copperas and corrective action taken or planned.

1. RAW MATERIALS

- a. Copperas - copperas crystals are produced as a by-product of ilmenite (titanium bearing) ore processing. Quality control is maintained by testing to determine that free acid and $TI O_2$ are within specification. The preliminary test for acceptance or rejection for processed moist copperas is visual judgement of crystal color against a "standard" color. All paramaters are under investigation. At this time, there is no indication that the copperas crystal quality is a part of the hardening problem.
- b. Limestone - limestone is added to neutralize free acid in the dried copperas. The quality of limestone and the rate of addition have been investigated. Corrections have been made where necessary to comply exactly with process specifications. It has been determined that one competitor uses no neutralizer or a different one than that in use at Savannah.

Tests have been made with no limestone addition to determine whether Savannah copperas will remain free flowing.

Results are not yet evaluated.

2. DRYING: Moist copperas is dried in a natural gas fired direct contact rotary dryer. The maximum temperature of copperas discharged from dryer should be $80^{\circ}C$ and operation at these temperatures is expected to produce copperas with reduced tendency to cake.

(Continued on page 2)

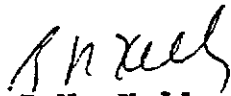
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Mr. V.P. Langone

August 17, 1972

3. PACKING: Dry copperas is packed in three ply 50 lb. vapor barrier kraft bags. Earlier, it was believed that moisture penetration of the bag caused caking. In June, some of the material caked immediately following bagging and complaints were received on caked dry bulk in hopper cars. These facts indicated that moisture alone was not the culprit in copperas caking.
4. RESULTS: In July, a redoubled effort was launched by Pigments R & D to determine the causes of dry copperas caking and to establish those alternate controls necessary for producing only free flowing dry copperas from the Savannah materials. To date, improved methods have been developed and one week old samples of copperas made using best available judgement have remained completely free flowing. This material is a demonstrably improved chemical compound with free flowing characteristics after a one week storage test.

Efforts are continuing to develop all necessary control parameters for copperas production.


R.N. Kelly

RNK/mjk

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INTEROFFICE CORRESPONDENCE

Wayne D-4 8/16/72
OFFICE BLOC/TUBE RM# DATE

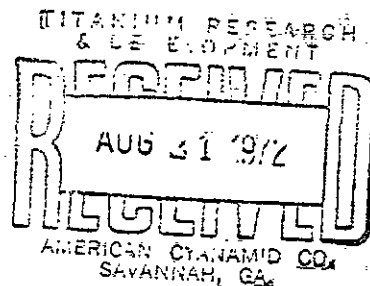
TO: Savannah

ATT'N. OF: Mr. N. Kelly

SUBJECT: Copperas/Dry

REFERENCE:

COPY TO: Mr. R. E. Logan
Mr. G. L. Roberts
Mr. D. E. Wilder
Mr. J. Ambrey
Mr. D. Rabb



Confirming our phone conversation of 8-16-72
regarding dry copperas:

Our shipment, ex Savannah, 8-1-72, car #SOU523896
was delivered to Texaco, Casper, Wyoming, condition of
material was Rock Hard.

Jim Ambrey will report on Texaco's decision re-
garding disposition of material.

As you stated during our conversation:

1. We should expect a progress report
Re: Copperas by 8-21-72
2. Dr. G. L. Roberts is directing an
accelerated technical program towards
resolving our present quality problems
3. Product produced since 8-10-72 looks
good. However, we are not yet in a
position to approve manufacturing
specifications for this product

We are all, of course, aware of difficulties created
by this problem from the standpoint of both marketing
and manufacturing. Your cooperation in the way of con-
tinued updates on progress reports will be very much
appreciated.

V. P. Langone

VPL:jh

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